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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MENON, KRISHNAN S

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/059,577

Applicant(s)

LEONARD ET AL.

Examiner

Krishnan S Menon

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 26, 27, 30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 26, 27, 30 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claims 1-15, 26,27,30 and 31 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-5,7,9,10,13,26,27,30 and 31 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by O'Dowd (US 5,275,736).

O'Dowd teaches a method of producing aqueous solution of thermodynamically free iodine from iodine vapor transferred across a membrane from an iodine source having a membrane permeable to iodine vapor enclosing the source of iodine vapor, and providing a vessel which contains the receiving medium for iodine permeated across the membrane (see figures, col 3 lines 28-47, col 4 line 43- col 5 line 21) as in claims 1. The iodine source is a liquid or solid as in claim 2 (col 2 lines 3-14). The iodine vapor is absorbed by the liquid contained in the vessel as in claim 3, where in the receiving medium is static (col 4 line 66-col 5 line 21). The method comprises passing iodine vapor from the source to a gas as in claim 4 and then to the liquid medium(col 6 line 67 – col 7 line 11). The membrane is a plastic as in claim 5, single ply as in claim 7, continuous film as in claim 9, non-woven as in claim 10, non-permeable to solid iodine as in claim 13 (col 6 lines 33-47).

Independent Claims 26 and 27 add the further limitations to claim 1 of controlling flow of iodine receiving medium in a batch or continuous process (taught by O'Dowd in col 5 line 41

Art Unit: 1723

– col 6 line 7: batch process), and preparing the iodine fluid for dietary purposes, which O'Dowd teaches in col 1 lines 40-50).

Independent Claim 30 is broader than claim 1 having halogen in place of iodine, and claim 31 depends from claim 30. O'Dowd teaches all the limitations of claims 30 and 31 as in claims 1 and 3 above. Iodine is a halogen.

Re the newly added limitation "porous membrane" in claims 1,26,27 and 30, O'Dowd teaches a barrier that permeates vapor (PBT, polyoxymethylene: see abstract and col 6 lines 33-38) and claims such a barrier, which would include the porous membrane as claimed by the applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
-
1. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Dowd (736).

Art Unit: 1723

O'Dowd teaches all the limitations of claim 1. Claim 15 adds further limitations of vessel being substantially impermeable to iodine vapor (col 4 lines 43-46); maintaining temperature between -10 and 110 deg F, Vacuum to 5 atm pressure, and constructing and testing the vessel for the pressure rating. O'Dowd teaches vacuum (col 7 lines 3-6), but is silent on the temperature and the vessel testing. However, it would be obvious to one of ordinary skill in the art that the temperature of O'Dowd's process is the ambient temperature, which falls in the range of -10 to 110 F, and that one would construct and test the vessels for its operating conditions for safety per code requirements.

2. Claims 6, 8, 11, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Dowd (736) in view of Koch (US 4,483,771).

O'Dowd teaches all the limitations of claim 1. Instant claims add further limitations, which O'Dowd does not teach, but Koch teaches, as follows: the iodine permeable membrane is inorganic (claim 6) (col 3 lines 10-15), is multi-ply with same or different structure (claim 8) (col 3 lines 39-45), has nano-structure (claim 11) (col 2 lines 43-46), perforated (claim 12) (col 2 lines 35-55), and transferring iodine vapors through pores less than 5 microns (claim 14) (col 2 lines 39-45). It would be obvious to one of ordinary skill in the art to use the teachings of Koch in the teachings of O'Dowd for such applications as described by Koch col 3 lines 43-56 and for strength and safety (Koch - col 1 lines 59-66).

3. Claims 1-3, 5-14, 26, 27, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koch (US 4,483,771) in view of O'Dowd (736).

Art Unit: 1723

Koch teaches a method of producing aqueous solution of iodine from iodine transferred across a porous membrane that is permeable to vapors but impermeable to water or solids (Fig 2, col 3 lines 7-55) as in claims 1,26,27 and 30. Iodine source is provided inside the envelope (fig 2) of a microporous membrane (col 3 lines 29-40).

Koch does not specifically teach having the 'filter' in a vessel that contains the receiving medium in instant claims, or a batch or continuous process as in claims 26 and 27. O'Dowd teaches an iodine pouch in a vessel that contains the receiving medium, and a batch process (see figures, col 3 lines 28-47, col 4 line 43- col 5 line 21, col 5 line 41 – col 6 line 7). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of O'Dowd in the teaching of Koch to have a vessel containing the receiving medium and the iodine filter for releasing thermodynamically free iodine into the receiving medium. Claim 30 recites a halogen instead of iodine, but iodine is a halogen. Claims 26 and 27 teach dietary or disinfectant, which Koch teaches (col 3 lines 43-60).

Koch teaches the further added limitations of claims 2,3, and 5-14 as follows:
Iodine releasing solid or liquid as in claim 2, mixing iodine vapor with flowing inert gas, with receiving medium static or moving as in claim 3, membrane is a plastic as in claim 5, inorganic membrane as in claim 6, membrane is single ply as in claim 7, multiply as in claim 8, continuous film as in claim 9, non-woven as in claim 10, nanostructure as in claim 11, perforated as in claim 12, non-permeable to solid iodine as in claim 13, pore size less than 5 microns as in claim 14 (see figure 2 and col 3 lines 7-60).

Response to Arguments

Art Unit: 1723

Applicant's arguments filed 7/14/03 have been fully considered but they are not persuasive.

Argument that present claims are not anticipated by O'Dowd: (1) membrane is non-porous: O'Dowd teaches and claims a barrier that permeates iodine vapor in abstract, col 6 lines 33-38 and the claims. "Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments" (In re *Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971)). (2) re the membrane being non-permeable to water vapor: O'Dowd does not teach so anywhere in the reference. Also, polybutylene terephthalate is known for moisture permeability unlike the applicant's contention.

Argument that claims are not unpatentable over O'Dowd alone or in view of Koch: Koch teaches a multi-layered filter: Koch teaches solid iodinated material in a microporous envelop as claimed (see fig 2 and col 3 lines 7-28). While Koch may be teaching this for the intended use as a filter through which fluids may pass, there is nothing in it that prevents the iodine vapor from permeating out. Permeation of the vapor through the membrane is inherent in the membrane. It may also be noted that the microfilter is intended for filtering out bacteria (see Koch, col 2 lines 5-12), so that the filter as constructed in fig 2 of Koch when used in a process stream should prevent the bacteria from entering the pouch, and in such a situation, if the iodine does not permeate out like the applicant argues, the filter would be ineffective. On the contrary, the filter would work because it releases iodine or other antibiotic in to the process-stream. Re the argument that the Koch membrane permeates liquid and vapor water, Koch also teaches membranes that are hydrophobic that does not permeate liquid water, but only water vapor.

Art Unit: 1723

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Koch provides single or multi-layer, hydrophobic microporous membrane barrier for the iodine pouch in fig 2 for release of antibiotics like iodine, and O'Dowd teaches use of iodine pouches for thermodynamic release of iodine vapors. Re the references teaching away, "Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments" (*In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971)).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 1723

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 703-305-5999.

The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Krishnan Menon
Patent Examiner


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